DETAILED ACTION

Response to Arguments

Applicant's arguments, see Remarks, filed October 13, 2009, with respect to the rejection(s) of claim(s) 1 - 5, 7 - 8, 13 – 15, 17 – 23, 25 – 26, 28 – 29, and 31 under 35 U.S.C. 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of over Vineet Singh et al. (U.S. Patent 6,055,539), hereinafter, "Singh," in view of A. Kathleen Hennessey et al. (U.S. Patent 6,483,938), hereinafter, "Hennessey" to address deficiencies as argued by Applicant.

Claim Objections

Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 4 is objected to under 37 CFR 1.75(c) as being in improper form because of a multiple dependent claim. See MPEP § 608.01(n).

608.01(n) [R-7] Dependent Claims

I. MULTIPLE DEPENDENT CLAIMS

37 CFR 1.75. Claim(s).

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(c) One or more claims may be presented in dependent form, referring back to and further limiting another claim or claims in the same application. Any dependent claim which refers to more than one other claim ("multiple dependent claim") shall refer to such other claims in the alternative only. A multiple dependent claim shall not serve as a basis for any other multiple dependent claim. For fee calculation purposes under § 1.16, a multiple dependent claim will be considered to be that number of claims to which direct reference is made therein. For fee calculation purposes also, any claim depending from a multiple dependent claim will be considered to be that number of claims to which direct reference is made in that multiple dependent claim. In addition to the other filing fees, any original application which is filed with, or is amended to include, multiple dependent claims must have paid therein the fee set forth in § 1.16(j). Claims in dependent form shall be construed to include all the limitations of the claim incorporated by reference into the dependent claim. A multiple dependent claim shall be construed to incorporate by reference all the limitations of each of the particular claims in relation to which it is being considered.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 17 – 31 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non – statutory subject matter.

Claims 17 – 31 are rejected under 35 U.S.C. 101 under 35 U.S.C. for being "software per se."

The claimed invention in claims 17 – 31 is addressed to "a classification system for records" and "a computer readable medium having embodied thereon a program that, when executed, causes a computer to execute a method." The claimed invention is directed to "a field specific classification structure that classifies," "a logic connector that connects," "a reference structure arrangement unit that arranges," "a class to structure connector that connects," "a selection unit that selects," "receiving records," "reading the values," "selecting field – specifically ordered classification structures," "searching from the selected classification structures," and "selecting a class from the intersection set," therefore, the claims are deemed to read as pure software systems, with no clear limitations that read on some sort of hardware. Merely saying that there is a computer readable medium is not sufficient, especially since there is no mention of this medium in the specification.

In view of Applicant's disclosure, specification paragraph [0020], the present invention may be embodied in software. Accordingly, the claim may become nothing

more than a set of software instructions which are “software per se” without the specific mention of hardware or a processor.

"Software per se" is non-statutory under 35 USC 101 because it is merely a set instruction without any defined tangible output or tangible result being produced. The requirement for tangible result under 35 USC 101 is defined in State Street Bank & Trust Co. v. Signature Financial Group Inc., 149 F.3d 1368, 47USPQ2d 1596 (Fed. Cir. 1998).

Therefore, the claimed subject matter fails to fall within on of the four statutory classes.

According to MPEP 2106:

The claims lack the necessary physical articles or objects to constitute a machine or a manufacture within the meaning of 35 USC 101. They are clearly not a series of steps or acts to be a process nor are they a combination of chemical compounds to be a composition of matter. As such, they fail to fall within a statutory category. They are, at best, functional descriptive material per se.

Descriptive material can be characterized as either "functional descriptive material" or "nonfunctional descriptive material." Both types of "descriptive material" are nonstatutory when claimed as descriptive material per se, 33 F.3d at 1360, 31 USPQ2d at 1759. When functional descriptive material is recorded on some computer-readable medium, it becomes structurally and functionally interrelated to the medium and will be statutory in most cases since use of technology permits the function of the descriptive

material to be realized. Compare In re Lowry, 32 F.3d 1579, 1583-84, 32 USPQ2d 1031, 1035 (Fed. Cir. 1994).

Merely claiming nonfunctional descriptive material, i.e., abstract ideas, stored on a computer-readable medium, in a computer, or on an electromagnetic carrier signal, does not make it statutory. See Diehr, 450 U.S. at 185-86,209 USPQ at 8 (noting that the claims for an algorithm in Benson were unpatentable as abstract ideas because "[t]he sole practical application of the algorithm was in connection with the programming of a general purpose computer.")

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1 - 5, 7 - 8, 13 – 15, 17 – 23, 25 – 26, 28 – 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vineet Singh et al. (U.S. Patent 6,055,539), hereinafter, “Singh,” in view of A. Kathleen Hennessey et al. (U.S. Patent 6,483,938), hereinafter, "Hennessey."

With respect to claim 1, Singh teaches:

receiving records containing several fields, the fields of which records containing values (i.e. records have fields with numeric and categorical values, (column 2, lines 1-9)),

reading the values contained in at least two specified fields from each of the received records (i.e. Figure 1 has a record with three different fields, (column 2, lines 23-25)),

selecting field-specifically ordered classification structures corresponding to the specified fields, which field-specifically ordered classification structures comprise an own ordered classification structure for each of the specified fields in the received record (i.e. classification is built on field attributes for each record, (column 2, lines 1-9)).

Singh does not explicitly disclose that for each record: searching from the selected classification structures a set of suitable classes for each of the specified fields, wherein the suitable classes correspond to a value read from one of said fields, forming an intersection set of the sets of suitable classes, selecting a class from the intersection set and assigning the selected class to the record, whereby said assigned class has been read from the field-specifically ordered classification structure as claimed.

However, Hennessey teaches:

for each record: searching from the selected classification structures a set of suitable classes for each of the specified fields, wherein the suitable classes correspond to a value read from one of said fields (i.e. classification system control searches and compares the descriptor values, which are stored in the description record to the

descriptor values stored in the knowledgebase and determines which group of examples have the same class number, column 21, lines 27 - 52),

forming an intersection set of the sets of suitable classes (i.e. a point of intersection identifies sets of suitable classes, column 28, lines 15 - 45), and

selecting a class from the intersection set and assigning the selected class to the record, whereby said assigned class has been read from the field-specifically ordered classification structure (i.e. system selects class of record, column 28, lines 15 - 45).

Singh and Hennessey are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teaching of Singh with the teaching of Hennessey in order to classify data fields using intersections (i.e. column 28, lines 15 - 45).

With respect to claim 2, Singh teaches forming an intersection set comprises forming a set on the basis of the values of the fields, in such a way that a set of classes is formed for each field (i.e. sets formed from field values, (column 3, lines 45-50)), wherein said intersection set comprises a field specific set that incorporates service IDs, and a condition of a field used in the conditional statement of the class of which is true (i.e. service ID indicated T/F as low/high, (column 2, lines 23-36)), wherein selecting a class comprises selecting the class that appears in all of the sets, i.e. whose conditional statement is entirely true, (i.e. low risk true, (column 2, lines 23-36)).

With respect to claim 3, Singh teaches selecting a class further comprises using the accuracy principle to select the class, to which the record is selected, from the classes corresponding to the reference value or reference values, in which case that is assigned, from of those corresponding to the reference value or reference values, which has the definition of which the greatest number of classification structure conditions are met (i.e. choose classification with highest number of classification conditions met, (column 2, lines 62-64)).

With respect to claim 4, Singh teaches selecting a class comprises selecting the class to which the record is assigned from the classes corresponding to a reference value or reference values, by applying an intersection or intersections and unions performed using logical operands (i.e. intersections and unions are performed using logical operands, or decision trees, (column 2, lines 10-22)).

With respect to claim 5, Singh teaches searching comprises using a search method that is faster than a sequential search, such as a binary search, a tree search, a hash search, and that the least comparisons are used to find the reference value according to the value (i.e. binary tree and has search used, (column 9, lines 59-67, and column 12, line 17)).

With respect to claim 7, Singh teaches that the fields are fields marked with a field ID (i.e. each record has a record ID, so the fields are characterized by their attribute and record ID, (column 3, lines 6-8)).

With respect to claim 8, Singh teaches that the fields contain values in various formats, such as numeric and symbolic values, and that there are specific classification

structures for the various formats, and/or indicators to the classification structures (i.e. numeric and categorical attribute values are placed in fields, and different classifiers are built based on those values, (column 2, lines 1-9)).

With respect to claim 13, Singh teaches that the names of the fields are set to form the entries of the table and for each field at least one operand-specific table according to at least one of the following operands is created, greater than (>), greater than or equal to (>=), less than , less than or equal to (=), equal to (=), and not equal to (!=) tables, so that a tree-like field-specific classification structure is created for each specified field (i.e. binary and decision tree classification structure are created for fields, (column 12, line 17, column 5, line 55)).

With respect to claim 14, Singh teaches that the intersection set includes more than one class and, of these classes, the class with the greatest accuracy is selected, which accuracy is defined on the basis of the number of fields used in the conditional statement of the class(i.e. choose classification with highest number of classification conditions met, (column 2, lines 62-64)) .

With respect to claim 15, Singh teaches that the intersection set is an empty set and the class is selected in such a way that a review is made of the statement with next lowest accuracy (i.e. intersection set is empty, (column 3, lines 52-53)).

With respect to claim 17, Singh teaches:

a field specific classification structure that classifies records according to at least one specified field of the received records (i.e. classification system receives records and fields, (column 2, lines 1-9, and column 3, lines 6-8)).

Singh does not explicitly disclose a logic connector that connects logical operands to the field specific classification structure as claimed.

However, Hennessey teaches a logic connector that connects logical operands to the field specific classification structure (i.e. a point of intersection identifies sets of suitable classes, column 28, lines 15 – 45, where values and classes are intersected),

a reference structure arrangement unit that arranges reference values used in the service class definition suiting each operand relating to each defined field into a separated ordered structure (i.e. the service class definition is stored in a knowledgebase, where operands relating to defined fields are stored in a structure, column 8, lines 26 - 45),

a class structure connector that connects classes suiting each reference value to each ordered structure, and a selection unit that selects, to a set class, the classification of a received record (i.e. after it has been determined that a value of a record is matched with another record within a class, the value is then associated with the class, column 28, lines 15 - 45).

Singh and Hennessey are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teaching of Singh with the teaching of Hennessey in order to classify data fields using intersections (i.e. column 28, lines 15 - 45).

With respect to claim 18, Singh teaches a recorder that records the conditions of the classification structure (i.e. conditions of classes recorded in classification structure: low/high, true/false, (column 2, lines 24-36)).

With respect to claim 19, Singh teaches an operand specific ordered data structure that contains at least one service ID according to the reference value are recorded in an operand-specific ordered data structure (i.e. operand specific ordered data structure records reference value and service ID, figure 6).

With respect to claim 20, Singh teaches the classification structure further comprising a selection structure based on operands and a class division corresponding to the selections according to the structure (i.e. field classification system is based on class division, column 2, lines 20-23).

With respect to claim 21, Singh teaches that the classification system contains format-specific classification structures, or format-specific indicators to the classification structures (i.e. system contains format specific structures, column 2, lines 1-4).

With respect to claim 22, Singh teaches that the reference values in the field-specific classification structure are arranged as an ordered structure essentially in order of magnitude (i.e. references arranged by magnitude, column 2, lines 24-36).

With respect to claim 23, Singh teaches a field specific classification structures containing a plurality of separate classification structures, wherein the separate structures are separated on the basis of the form of the symbol used in the classification structure field, such as character-form or numeric (i.e. numeric and categorical attribute

values are placed in fields, and different classifiers are built based on those values, (column 2, lines 1-9)).

With respect to claim 25, Singh teaches that the reference values are listed in order of magnitude and/or accuracy (i.e. references arranged by magnitude, column 2, lines 24-36).

With respect to claim 26, Singh teaches that it is arranged to search from the classification structure for the service class set for a received record (i.e. classification structure may be searched according to record, column 2, lines 1-9).

With respect to claim 28, Singh teaches that the fields are fields marked using a field identifier (i.e. each record has a record ID, so the fields are characterized by their attribute and record ID, (column 3, lines 6-8)).

With respect to claim 29, Singh teaches that values with different formats, such as numeric and symbolic values, are set in the fields and there are specific classifications structures and/or indicators to classification structures for the different formats (i.e. fields with numerical values and categorical values are part of classification structure, column 2, lines 1-9).

With respect to claim 31, Singh teaches:

receiving records containing several fields, the fields of which records containing values (i.e. records have fields with numeric and categorical values, (column 2, lines 1-9)),

reading the values contained in at least two specified fields from each of the received records (i.e. Figure 1 has a record with three different fields, (column 2, lines 23-25)),

selecting field-specifically ordered classification structures corresponding to the specified fields, which field-specifically ordered classification structures comprise an own ordered classification structure for each of the specified fields in the received record (i.e. classification is built on field attributes for each record, (column 2, lines 1-9)).

Singh does not explicitly disclose that for each record: searching from the selected classification structures a set of suitable classes for each of the specified fields, wherein the suitable classes correspond to a value read from one of said fields, forming an intersection set of the sets of suitable classes, selecting a class from the intersection set and assigning the selected class to the record, whereby said assigned class has been read from the field-specifically ordered classification structure as claimed.

However, Hennessey teaches:

for each record: searching from the selected classification structures a set of suitable classes for each of the specified fields, wherein the suitable classes correspond to a value read from one of said fields (i.e. classification system control searches and compares the descriptor values, which are stored in the description record to the descriptor values stored in the knowledgebase and determines which group of examples have the same class number, column 21, lines 27 - 52),

forming an intersection set of the sets of suitable classes (i.e. a point of intersection identifies sets of suitable classes, column 28, lines 15 - 45), and

selecting a class from the intersection set and assigning the selected class to the record, whereby said assigned class has been read from the field-specifically ordered classification structure (i.e. system selects class of record, column 28, lines 15 - 45).

Singh and Hennessey are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teaching of Singh with the teaching of Hennessey in order to classify data fields using intersections (i.e. column 28, lines 15 - 45).

Claims 6, 9 – 12, 16, 24, 27, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vineet Singh et al. (U.S. Patent 6,055,539), hereinafter, "Singh," in view of A. Kathleen Hennessey et al. (U.S. Patent 6,483,938), hereinafter, "Hennessey," in view of Moshe Zolotov (U.S. Patent 6,731,730), hereinafter, "Zolotov."

With respect to claim 6, the combination of Singh and Hennessey does not explicitly disclose that the records received are formed on the basis of the properties of the telecommunications connections.

However, Zolotov teaches that the records received are formed on the basis of the properties of the telecommunications connections (i.e. records are based on telecommunication connections, column 5, lines 21-40).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40). The motivation for doing so would have been to provide a system for building combined CDR databases for use in telecommunication networks, (Zolotov, column 2, lines 10-17)).

With respect to claim 9, the combination of Singh and Hennessey does not explicitly disclose that the classes to which the records are selected are service classes of billable telecommunications services, or a call, and/or types of telecommunications connections.

However, Zolotov teaches that the classes to which the records are selected are service classes of billable telecommunications services, or a call, and/or types of telecommunications connections (i.e. the CDR, or combined call detail record database, contains billing data for telecommunication system, column 4, lines 15-18).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of

Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

With respect to claim 10, the combination of Singh and Hennessey does not explicitly disclose that the classes, to which the records are selected, are separated on the basis of conditions relating to the properties of telecommunications connections.

However, Zolotov teaches that the classes, to which the records are selected, are separated on the basis of conditions relating to the properties of telecommunications connections (i.e. type of telecommunication connection separates the records in classification, column 5, lines 21-40).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

With respect to claim 11, the combination of Singh and Hennessey does not explicitly disclose that one field identifier corresponds to a field depicting the duration in time of a billable telecommunications connection and/or a field depicting the volume and/or speed of the data transmitted over a billable telecommunications connection.

However, Zolotov teaches that one field identifier corresponds to a field depicting the duration in time of a billable telecommunications connection and/or a field depicting

the volume and/or speed of the data transmitted over a billable telecommunications connection (i.e. duration of a call is a field in the CDR, column 6, lines 26-44).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

With respect to claim 12, the combination of Singh and Hennessey does not explicitly disclose that the record is a telecommunications network event description record, such as a CDR, ER, IPDR, or UDR.

However, Zolotov teaches that the record is a telecommunications network event description record, such as a CDR, ER, IPDR, or UDR (i.e. record is a Combined Call Detail Record database (CDR) in a management telecommunications network, (abstract)).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

With respect to claim 16, the combination of Singh and Hennessey does not explicitly disclose that it is performed in a mediator system of a telecommunications network.

However, Zolotov teaches that it is performed in a mediator system of a telecommunications network (i.e. mediator collects data from network elements in a telecommunications network, column 5, lines 41-50).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

With respect to claim 24, the combination of Singh and Hennessey does not explicitly disclose that the field identifier is arranged to correspond to the field depicting the data-transfer capacity of a billable telecommunications connection.

However, Zolotov teaches that the field identifier is arranged to correspond to the field depicting the data-transfer capacity of a billable telecommunications connection (i.e. duration of a call is a field in the CDR, column 6, lines 26-44).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database.

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

With respect to claim 27, the combination of Singh and Hennessey does not explicitly disclose that it is arranged to operate in a mediator system of a telecommunications network.

However, Zolotov teaches that it is arranged to operate in a mediator system of a telecommunications network (i.e. mediator collects data from network elements in a telecommunications network, column 5, lines 41-50).

Singh, Hennessey and Zolotov are analogous art because they are from the same field of endeavor of accessing a classified database. At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

With respect to claim 30, the combination of Singh and Hennessey does not explicitly disclose teaches that at least one field identifier corresponds to a field depicting the duration in time of a billable telecommunications connection and/or a field depicting the volume and/or rate of data transmitted on a billable telecommunications connection.

However, Zolotov teaches that at least one field identifier corresponds to a field depicting the duration in time of a billable telecommunications connection and/or a field depicting the volume and/or rate of data transmitted on a billable telecommunications connection (i.e. duration of a call is a field in the CDR, column 6, lines 26-44).

At the time of the invention, it would have been obvious to one of ordinary skill in the art to modify the teachings of Singh and Hennessey with the teaching of Zolotov in order to use the telecommunication classification as part of the CDR database system, (Zolotov, column 5, lines 22-40).

Conclusion/Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to ALEXANDRIA Y. BROMELL whose telephone number is (571)270-3034. The examiner can normally be reached on M - R 9 - 3.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John R. Cottingham can be reached on 571-272-7079. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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February 12, 2010

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